

### **Municipal Center**

The Newtown Municipal Center, located at 3 Primrose Street, is a single story office building that is part of the Fairfield Hills Campus. The building houses multiple municipal agencies, including the town's tax office, fire marshal and the land use, building and health and economic and community development departments. The building encompasses some 33,000 ft (not including the basement or attic) and was originally constructed in 1933 with a complete renovation in 2009. The building is occupied by approximately 80 people from 7:00 am to 4:00 pm Monday through Friday, with extended hours Monday through Thursday until 11:00 pm for meetings. The building has a conditioned basement containing storage space and mechanical and electrical rooms and a conditioned attic which contains air handling units and exhaust fans. There are approximately 70 personal computers in use throughout the building. The building has a brick façade, a mostly sloped, asphalt shingled roof and primarily wood-framed, single pane windows.

The building is heated and cooled by three Carrier air handling units (AHU) located in the attic. The AHUs have variable speed drives (VSD) on their supply and return fans (though all VSDs were noted to be operating in hand mode), hot water heating coils and two stage direct expansion (DX) cooling coils. The split system DX condensing units, made by Carrier (CU-1 40 tons, CU-2 50 tons & CU-3 30 tons), are air-cooled and are located at ground level on the exterior of the building. These AHUs supply a variable amount of conditioned air to variable air volume (VAV) boxes, some of which have hot water reheat coils.

Two Lochinvar, natural gas-fired, hot water boilers (model CHN0991, 84% efficiency) supply 831.6 MBH of hot water to the building's VAV boxes and AHU coils. The hot water is pumped through the building by two 7.5 hp, VSD driven, Bell and Gossett 160 gpm pumps and is circulated through the boilers by two fractional horsepower 55 gpm pumps. Domestic hot water is provided by two Jetglas, electrically-heated (480V) water heaters with 40 gallon storage tanks. These water heaters have manual temperature control and are frequently adjusted by building staff from 120°F to approximately 140°F (during our site visit one was set at 120°F, the other 140°F).

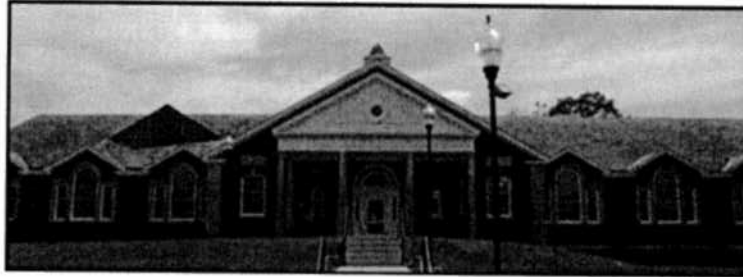
All of the building's HVAC equipment is controlled entirely by an Alerton direct digital control (DDC) energy management system (EMS), however it is currently underutilized and significant opportunities exist to optimize the system. There is a fuel oil-fired emergency generator that supplies emergency power to the building during grid failure.

A wide variety of lighting technology is used at the Newtown Municipal building. Open office areas are primarily illuminated by pendant-hung direct/indirect fixtures containing 28 watt T5 lamps with electronic ballasts. Indirect recessed troffer fixtures illuminate similar areas in the Information Technology/Town Clerk wing. Corridors are partially illuminated by recessed 'can' fixtures containing 42 watt and 26 watt triple biax compact fluorescent lamps (CFLs). Restrooms are illuminated by similar fixtures containing 26 watt triple biax CFLs. A small number (~20) of MR 16 halogen spot lights were noted in areas where the public interact with building staff. The basement and mechanical spaces are illuminated by surface-mounted strip fixtures containing 28 watt and 32 watt T8 lamps with electronic ballasts. Exterior lighting is provided by pole-mounted fixtures containing LED lamps.

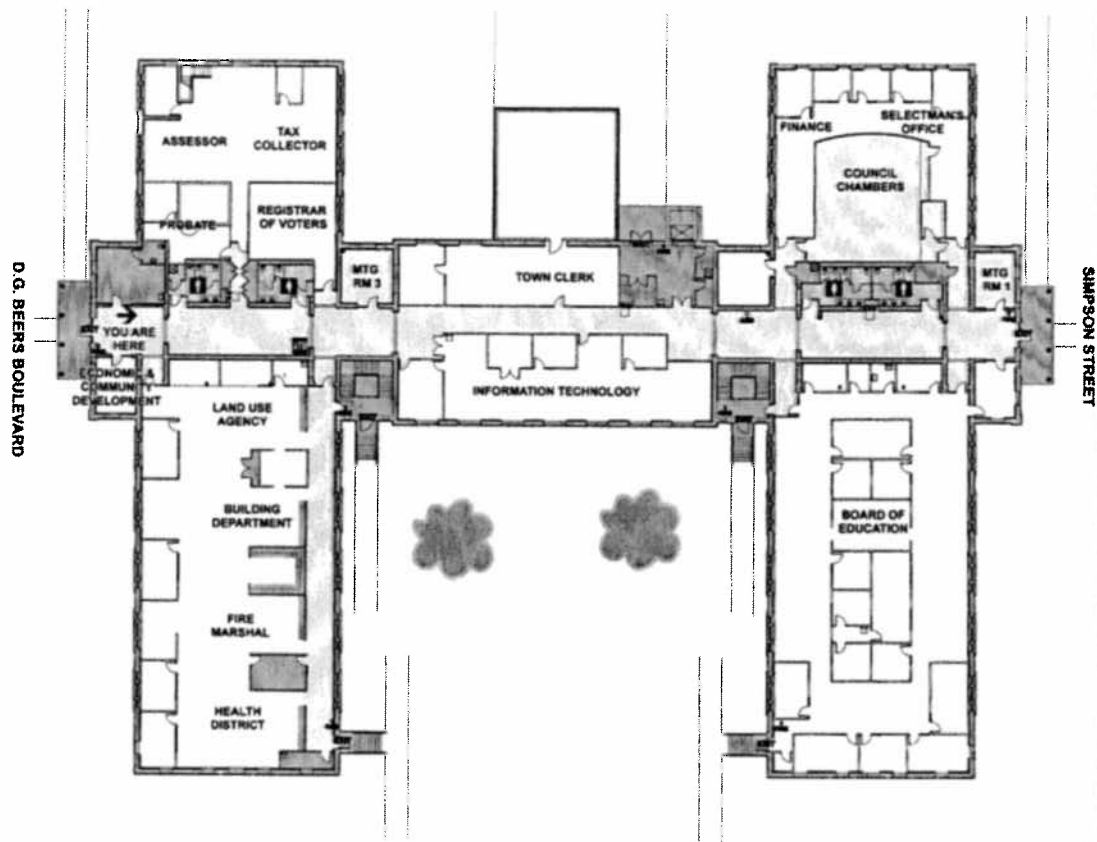
**RFP for Energy Performance Contracting Services**  
**Attachment E: Technical Facility Profile**

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Three (3) Philips Liteswitch lighting control panels have supervisory control of all interior and exterior lighting; however the staff is having issues with this system. In addition, occupancy sensors were noted throughout the building in all space types.



### Municipal Center Floor Plan



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**Middle School**

The Newtown Middle School, located at 11 Queen Street, is a partially single level and partially two level school originally built in 1952 with multiple additions made in 1992. This school has approximately 120 staff and 880 students in seventh and eighth grades. The school is generally occupied from 7:00 am to 2:00 pm, Monday through Friday for 10 months of the year, with variable after school (until 4:00 pm to 9:00 pm), weekend and summer occupancy. The building has a brick façade with a flat white membrane roof on all areas except the two level A-wing, which has a sloped asphalt shingled roof. There are several large skylights over the cafeteria which transfers large amounts of light and heat into the space below and double pane (half inch air gap) windows throughout the building that are in fairly good condition.

The building encompasses some 175,000 ft<sup>2</sup> and is 100% heated by fuel oil and approximately 25% air conditioned (see floor plan below). Natural gas is onsite; however it is only used in the kitchen and science areas. The school is heated by four (4) HB Smith, oil-fired steam boilers. We were informed by building staff that this summer, boilers #1 and #2, which are both No. 44 Mills (~2,800 MBH) water tube boilers, will be decommissioned in place. Boilers #3 and #4 are No. 60 model 1950 (~4,500 MBH) and No. 42 model 1945 (~3,400 MBH), respectively, and will continue to operate. These boilers distribute steam to approximately half of the building and hot water (converted in a boiler room heat exchanger) to the other half. Hot water is circulated through the building from each steam-to-hot water heat exchanger by a pair of pumps (4 pumps total); 5 hp pumps for one heat exchanger, 7.5 hp pumps for the other. The steam and hot water primarily serves perimeter radiation, however it also serves hot water coils in the ten (10) air handling units (AHUs) throughout the building. In addition to the AHUs serving the Gym, Locker room, Cafeteria, Auditorium and Music room, there are also five (5) Trane packaged AHUs and three (3) split system air conditioning units on the roof.

There are approximately 70 roof-mounted exhaust fans. A large number of these exhaust fans are no longer operable and/or necessary; we were informed by building staff that when the flat portions of the building are re-roofed in the near future, the town is planning on removing some of this redundant equipment and any associated roof curbs and covering over them.

Domestic hot water is provided by a Bock, oil-fired, domestic hot water heater that is located in the boiler room. The unit has 32 gallons of storage capacity; however the heated water is piped to an approximately 2,000 gallon, poorly insulated storage tank. In the cafeteria mechanical room there is a second AO Smith, natural gas-fired, domestic hot water heater with 65 gallons of storage capacity. The unit is similarly piped to an approximately 3,000 gallon tank, which is also poorly insulated.

The building has a recently installed Alerton (Webtalk 2.5 SP1) direct digital control (DDC) energy management system (EMS), which gives staff limited management of the original pneumatic control system and start/stop control of equipment such as pumps, air handling units and boilers. There are three reciprocating air compressors that supply the control air for the pneumatic system. All rooms with hot water or steam perimeter radiation have mostly new, stand-alone, thermostat-controlled valves to maintain occupant comfort.

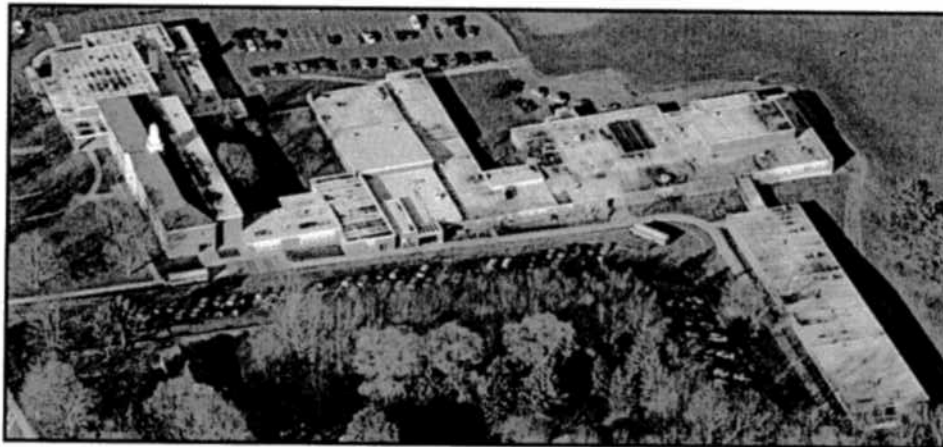
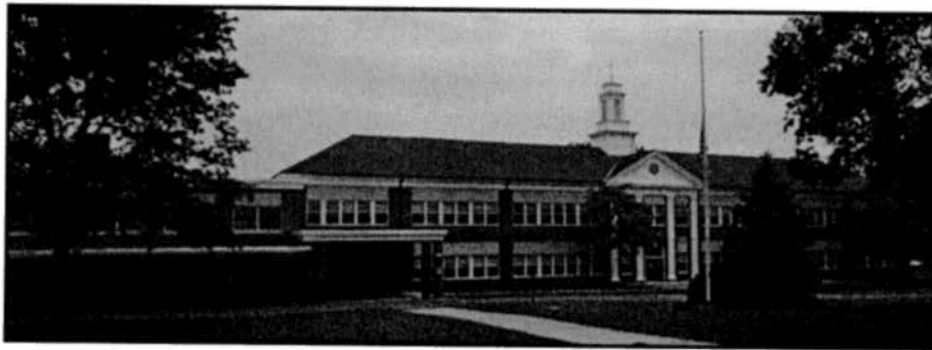
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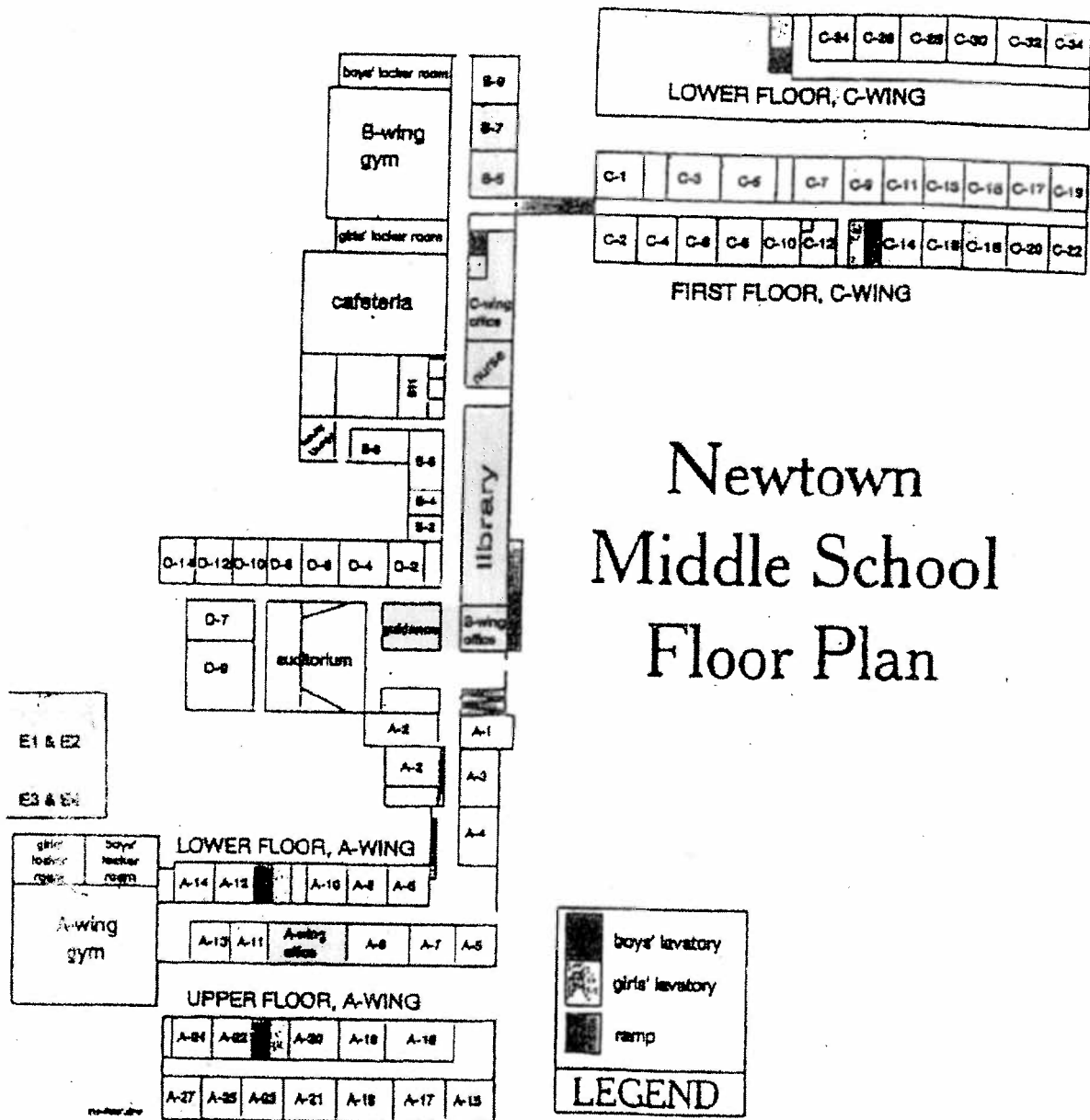
An oil-fired, Kohler emergency generator can supply 125kW of emergency power to the building in the event of grid failure.

The majority of the interior lighting throughout the Newtown Middle School is provided by recessed troffer fixtures containing a mixture of 28 watt and 32 watt T8 lamps (both types were noted) with electronic ballasts. These fixtures were noted in corridors, classrooms, offices and the kitchen. The library is illuminated by surface-mounted 'wraparound' fixtures containing a mixture of 28 watt and 32 watt T8 lamps with electronic ballasts. Surface-mounted and chain-hung strip fixtures containing a mixture of 28 watt and 32 watt T8 lamps with electronic ballasts were noted in mechanical spaces.

Occupancy sensors were noted throughout the building in many spaces; however there are some areas such as hallways, the library and the gymnasium that are controlled by key-operated on/off switches. The majority of the building's exterior lighting is controlled by mechanical timeclocks; however the school is in the process of converting all exterior lighting not controlled by timeclocks to photocell control.



## Middle School Floor plan



Air Conditioned Areas

**RFP for Energy Performance Contracting Services**  
**Attachment E: Technical Facility Profile**

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**Utility Data Summary**

FY 2010 - 2011 Utility Cost							
Building	Area (ft <sup>2</sup> )	Electric	Natural Gas	Fuel Oil	Propane	Total	Cost/ft <sup>2</sup>
Municipal Building	33,000	\$ 79,727	\$ 22,882	\$ -	\$ -	\$ 102,608	\$ 3.11
Newtown Middle School	175,000	\$ 133,744	\$ 3,767	\$ 149,504	\$ -	\$ 287,015	\$ 1.64
Middle Gate School	57,100	\$ 46,971	\$ -	\$ 56,043	\$ 2,209	\$ 103,014	\$ 1.80
Total	265,100	\$ 260,442	\$ 26,648	\$ 205,547	\$ 2,209	\$ 492,637	\$ 1.86

FY 2010 - 2011 Utility Consumption							
Building	Area (ft <sup>2</sup> )	Electric (kWh)	Natural Gas (therms)	Fuel Oil (US Gal)	Propane (US Gal)	Total (MMBtu)	Btu/ft <sup>2</sup> /year
Municipal Building	33,000	556,048	21,651	-	-	4,127	125,069
Newtown Middle School	175,000	911,972	2,654	65,491	-	12,469	71,249
Middle Gate School	57,100	289,042	-	24,364	756	4,435	77,667
Total	265,100	1,757,062	24,305	89,855	756	21,031	79,331

*A sample bill for each account will be provided at the mandatory walk-through, as well as drawings for each building.*

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**Utility Data**

Celtic Energy has compiled and tabulated the latest two years of utility consumption and cost data, shown below.

**Newtown Municipal Building Utility Data**

Electricity		kWh	Cost	\$/kWh
FY 2010- 2011	Jul	61,440	\$ 9,055	\$ 0.147
	Aug	61,840	\$ 7,628	\$ 0.123
	Sep	51,840	\$ 7,669	\$ 0.148
	Oct	41,088	\$ 6,106	\$ 0.149
	Nov	41,472	\$ 6,284	\$ 0.152
	Dec	40,704	\$ 5,687	\$ 0.140
	Jan	34,560	\$ 4,976	\$ 0.144
	Feb	37,248	\$ 5,361	\$ 0.144
	Mar	33,792	\$ 4,921	\$ 0.146
	Apr	39,552	\$ 5,842	\$ 0.148
	May	49,536	\$ 7,258	\$ 0.147
	Jun	62,976	\$ 8,940	\$ 0.142
Total		556,048	\$ 79,727	\$ 0.143
FY 2009- 2010	Jul*	-	-	-
	Aug*	46,464	\$ 9,078	\$ 0.195
	Sep*			
	Oct*	38,784	\$ 7,362	\$ 0.190
	Nov	37,248	\$ 6,783	\$ 0.182
	Dec	41,088	\$ 7,513	\$ 0.183
	Jan	38,016	\$ 6,717	\$ 0.177
	Feb	36,096	\$ 6,350	\$ 0.176
	Mar	35,328	\$ 6,188	\$ 0.175
	Apr	39,936	\$ 7,316	\$ 0.183
	May	37,248	\$ 5,770	\$ 0.155
	Jun	46,080	\$ 7,212	\$ 0.157
Total		396,288	\$ 70,290	\$ 0.177

\*Construction/renovation of Newtown Municipal Building was not completed until late October 2009; cost and consumption data for August-October 2009 are representative of construction period. No data was available for July 2009.



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**Newtown Municipal Building Utility Data**

<b>Natural Gas</b>		<b>Therms</b>	<b>Cost</b>	<b>\$/Therm</b>
<b>FY 2010- 2011</b>	Jul	186	\$ 522	\$ 2.814
	Aug	309	\$ 642	\$ 2.076
	Sep	577	\$ 883	\$ 1.530
	Oct	1,113	\$ 1,384	\$ 1.243
	Nov	2,165	\$ 2,106	\$ 0.973
	Dec	3,784	\$ 3,455	\$ 0.913
	Jan	4,176	\$ 3,849	\$ 0.922
	Feb	3,320	\$ 3,331	\$ 1.003
	Mar	2,763	\$ 2,738	\$ 0.991
	Apr	1,711	\$ 1,770	\$ 1.034
	May	979	\$ 1,255	\$ 1.282
	Jun	567	\$ 944	\$ 1.666
<b>Total</b>		<b>21,651</b>	<b>\$ 22,882</b>	<b>\$ 1.057</b>
<b>FY 2009- 2010</b>	Jul*	-	\$ -	
	Aug*	-	\$ -	
	Sep*	-	\$ -	
	Oct*	2,516	\$ 2,127	\$ 0.846
	Nov			
	Dec	3,536	\$ 2,445	\$ 0.691
	Jan	3,712	\$ 3,030	\$ 0.816
	Feb	3,763	\$ 3,642	\$ 0.968
	Mar	2,165	\$ 2,353	\$ 1.087
	Apr	1,907	\$ 2,216	\$ 1.162
	May	845	\$ 1,182	\$ 1.398
	Jun	474	\$ 808	\$ 1.704
<b>Total</b>		<b>18,919</b>	<b>\$ 17,804</b>	<b>\$ 0.941</b>

\*Construction/renovation of Newtown Municipal Building was not completed until late October 2009. No data was available from July to September 2009.

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**Newtown Municipal Building Utility Data**

<b>Water</b>		<b>1,000 US Gal</b>	<b>Cost</b>	<b>\$/1,000 US Gal</b>
<b>FY 2010- 2011</b>	Jul	8.8	\$ 574	\$ 21.59
	Aug	9.0		
	Sep	8.8		
	Oct*	21.4	\$ 852	\$ 13.17
	Nov	20.8		
	Dec	22.5		
	Jan	19.8	\$ 846	\$ 13.26
	Feb	21.3		
	Mar	22.7		
	Apr**	19.9	\$ 842	\$ 13.26
	May**	22.3		
	Jun**	21.3		
<b>Total</b>		<b>218.6</b>	<b>\$ 3,114</b>	<b>\$ 14.25</b>
<b>FY 2009- 2010</b>	Jul <sup>†</sup>	-	-	-
	Aug <sup>†</sup>	-		
	Sep <sup>†</sup>	-		
	Oct <sup>†</sup>	-	\$ 437	\$ 55.32
	Nov <sup>†</sup>	-		
	Dec	7.9		
	Jan	8.3	\$ 438	\$ 17.30
	Feb	7.7		
	Mar	9.3		
	Apr	8.8	\$ 571	\$ 21.80
	May	8.6		
	Jun	8.8		
<b>Total</b>		<b>59.4</b>	<b>\$ 1,446</b>	<b>\$ 24.34</b>

\*We were informed by the Town that the marked increase in monthly water consumption in October 2010 was a result of the installation and backwashing of a sand filter due to poor water quality.

\*\*The Town has yet to receive a bill for the April – June 2011 quarter. Cost for this period was estimated based on the January – March 2011 rate (\$13.26 / 1,000 US Gal).

<sup>†</sup>Construction/renovation of Newtown Municipal Building was not completed until late October 2009. Water was not metered until December 2009; no data was available from July to November 2009.

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**Newtown Middle School Utility Data**

Electricity		kWh	Cost	\$/kWh
<b>FY 2010- 2011</b>	Jul	74,217	\$ 12,301	\$ 0.166
	Aug	14,083	\$ 4,231	\$ 0.300
	Sep	71,912	\$ 11,843	\$ 0.165
	Oct	86,730	\$ 13,293	\$ 0.153
	Nov	74,541	\$ 11,823	\$ 0.159
	Dec	86,386	\$ 13,327	\$ 0.154
	Jan	67,052	\$ 10,215	\$ 0.152
	Feb	76,348	\$ 11,060	\$ 0.145
	Mar	74,438	\$ 12,945	\$ 0.174
	Apr	81,736	\$ 11,625	\$ 0.142
	May	98,640	\$ 13,467	\$ 0.137
	Jun	105,889	\$ 9,488	\$ 0.090
<b>Total</b>		<b>911,972</b>	<b>\$ 142,703</b>	<b>\$ 0.147</b>
<b>FY 2009- 2010</b>	Jul	63,738	\$ 10,627	\$ 0.167
	Aug	61,320	\$ 10,524	\$ 0.172
	Sep	98,202	\$ 16,854	\$ 0.172
	Oct	64,372	\$ 11,048	\$ 0.172
	Nov	72,724	\$ 12,392	\$ 0.170
	Dec	94,524	\$ 16,223	\$ 0.172
	Jan	98,700	\$ 18,252	\$ 0.185
	Feb	86,161	\$ 12,507	\$ 0.145
	Mar	73,530	\$ 11,244	\$ 0.153
	Apr	98,395	\$ 15,020	\$ 0.153
	May	79,331	\$ 14,670	\$ 0.185
	Jun	74,550	\$ 13,786	\$ 0.185
<b>Total</b>		<b>965,547</b>	<b>\$ 163,149</b>	<b>\$ 0.169</b>

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**Newtown Middle School Utility Data**

<b>Fuel Oil</b>		<b>US Gal</b>	<b>Cost</b>	<b>\$/US Gal</b>
<b>FY 2010- 2011</b>	Jul	-	\$ -	\$ -
	Aug	-	\$ -	\$ -
	Sep	-	\$ -	\$ -
	Oct	1,726	\$ 3,970	\$ 2.300
	Nov	1,274	\$ 2,930	\$ 2.300
	Dec	17,792	\$ 39,787	\$ 2.236
	Jan	19,081	\$ 43,890	\$ 2.300
	Feb	7,556	\$ 17,380	\$ 2.300
	Mar	6,473	\$ 14,889	\$ 2.300
	Apr	11,589	\$ 26,657	\$ 2.300
	May	-	\$ -	\$ -
	Jun	-	\$ -	\$ -
	<b>Total</b>	<b>65,491</b>	<b>\$ 149,504</b>	<b>\$ 2.283</b>
<b>FY 2009- 2010</b>	Jul	-	\$ -	\$ -
	Aug	-	\$ -	\$ -
	Sep	-	\$ -	\$ -
	Oct	-	\$ -	\$ -
	Nov	5,057	\$ 12,408	\$ 2.454
	Dec	19,325	\$ 47,418	\$ 2.454
	Jan	-	\$ -	\$ -
	Feb	15,316	\$ 37,565	\$ 2.453
	Mar	15,094	\$ 37,006	\$ 2.452
	Apr	1,010	\$ 2,476	\$ 2.452
	May	5,360	\$ 13,142	\$ 2.452
	Jun	4,257	\$ 9,307	\$ 2.186
	<b>Total</b>	<b>65,419</b>	<b>\$ 159,323</b>	<b>\$ 2.435</b>

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**Newtown Middle School Utility Data**

<b>Natural Gas</b>	<b>Therms</b>	<b>Cost</b>	<b>\$/Therm</b>
<b>FY 2010- 2011</b>	Jul	-	-
	Aug	83	\$ 170
	Sep	187	\$ 300
	Oct	260	\$ 382
	Nov	220	\$ 329
	Dec	381	\$ 503
	Jan	224	\$ 340
	Feb	336	\$ 473
	Mar	348	\$ 470
	Apr	347	\$ 435
	May	249	\$ 337
	Jun	19	\$ 28
<b>Total</b>		<b>2654</b>	<b>\$ 3,767</b>
<b>FY 2009- 2010</b>	Jul	-	\$ -
	Aug	78	\$ 143
	Sep	348	\$ 400
	Oct	280	\$ 343
	Nov	228	\$ 300
	Dec	302	\$ 360
	Jan	293	\$ 384
	Feb	447	\$ 610
	Mar	293	\$ 428
	Apr	280	\$ 436
	May	265	\$ 401
	Jun	203	\$ 330
<b>Total</b>		<b>3,016</b>	<b>\$ 4,135</b>
			<b>\$ 1.371</b>

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**Newtown Middle School Utility Data**

<b>Water</b>		<b>1,000 US Gal</b>	<b>Cost</b>	<b>\$/1,000 US Gal</b>
<b>FY 2010-2011</b>	Jul	33	\$ 327	\$ 9.910
	Aug	31	\$ 312	\$10.060
	Sep	80	\$ 565	\$ 7.061
	Oct	84	\$ 585	\$ 6.965
	Nov	81	\$ 570	\$ 7.036
	Dec	81	\$ 570	\$ 7.036
	Jan	84	\$ 585	\$ 6.965
	Feb	76	\$ 554	\$ 7.295
	Mar	109	\$ 720	\$ 6.608
	Apr	56	\$ 459	\$ 8.191
	May	4	\$ 230	\$57.463
	Jun	3	\$ 224	\$74.723
<b>Total</b>		<b>722</b>	<b>\$ 5,701</b>	<b>\$ 7.896</b>
<b>FY 2009-2010</b>	Jul	35	\$ 351	\$ 10.025
	Aug	25	\$ 297	\$11.897
	Sep	101	\$ 662	\$ 6.553
	Oct	95	\$ 632	\$ 6.652
	Nov	75	\$ 532	\$ 7.095
	Dec	78	\$ 547	\$ 7.014
	Jan	88	\$ 597	\$ 6.784
	Feb	79	\$ 552	\$ 6.988
	Mar	112	\$ 717	\$ 6.399
	Apr	78	\$ 547	\$ 7.014
	May	83	\$ 572	\$ 6.892
	Jun	-	\$ -	\$ -
<b>Total</b>		<b>849</b>	<b>\$ 6,006</b>	<b>\$ 7.074</b>

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**Middle Gate Elementary School Utility Data**

Electricity		kWh	Cost	\$/kWh
FY 2010- 2011	Jul	15,600	\$ 2,927	\$ 0.188
	Aug	15,721	\$ 3,000	\$ 0.191
	Sep	20,472	\$ 3,705	\$ 0.181
	Oct	23,642	\$ 4,021	\$ 0.170
	Nov	27,425	\$ 4,395	\$ 0.160
	Dec	28,893	\$ 4,622	\$ 0.160
	Jan	27,204	\$ 4,119	\$ 0.151
	Feb	28,080	\$ 4,238	\$ 0.151
	Mar	26,660	\$ 4,133	\$ 0.155
	Apr	29,249	\$ 4,445	\$ 0.152
	May	23,621	\$ 3,814	\$ 0.161
	Jun	22,475	\$ 3,552	\$ 0.158
Total		289,042	\$ 46,971	\$ 0.163
FY 2009- 2010	Jul	14,570	\$ 3,112	\$ 0.214
	Aug	15,001	\$ 2,575	\$ 0.172
	Sep	21,672	\$ 3,720	\$ 0.172
	Oct	24,122	\$ 4,140	\$ 0.172
	Nov	25,745	\$ 4,387	\$ 0.170
	Dec	28,333	\$ 4,863	\$ 0.172
	Jan	28,963	\$ 5,356	\$ 0.185
	Feb	27,061	\$ 4,666	\$ 0.172
	Mar	26,660	\$ 5,079	\$ 0.191
	Apr	28,003	\$ 4,662	\$ 0.166
	May	22,584	\$ 4,176	\$ 0.185
	Jun	23,914	\$ 4,422	\$ 0.185
Total		286,628	\$ 51,158	\$ 0.178

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Middle Gate Elementary School Utility Data

Fuel Oil		US Gal	Cost	\$/US Gal
FY 2010- 2011	Jul	-	\$ -	
	Aug	-	\$ -	
	Sep	-	\$ -	
	Oct	1,300	\$ 2,990	\$ 2.300
	Nov	2,500	\$ 5,751	\$ 2.300
	Dec	4,500	\$ 10,351	\$ 2.300
	Jan	4,000	\$ 9,201	\$ 2.300
	Feb	3,800	\$ 8,741	\$ 2.300
	Mar	4,200	\$ 9,661	\$ 2.300
	Apr	4,064	\$ 9,349	\$ 2.300
	May	-	\$ -	
	Jun	-	\$ -	
Total		24,364	\$ 56,043	\$ 2.300
FY 2009- 2010	Jul	-	\$ -	\$ -
	Aug	-	\$ -	\$ -
	Sep	-	\$ -	\$ -
	Oct	-	\$ -	\$ -
	Nov	2,500	\$ 6,134	\$ 2.454
	Dec	5,200	\$ 12,759	\$ 2.454
	Jan	4,829	\$ 11,849	\$ 2.454
	Feb	663	\$ 1,626	\$ 2.452
	Mar	2,963	\$ 7,264	\$ 2.452
	Apr	6,028	\$ 14,779	\$ 2.452
	May	749	\$ 1,839	\$ 2.455
	Jun	-	\$ -	\$ -
Total		22,932	\$ 56,250	\$ 2.453



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**Middle Gate Elementary School Utility Data**

<b>Propane</b>	<b>US Gal</b>	<b>Cost</b>	<b>\$/US Gal</b>
<b>FY 2010- 2011</b>	Jul	-	\$ -
	Aug	-	\$ -
	Sep	-	\$ -
	Oct	63	\$ 137
	Nov	139	\$ 331
	Dec	167	\$ 416
	Jan	-	\$ -
	Feb	152	\$ 408
	Mar	191	\$ 514
	Apr	45	\$ 402
	May	-	\$ -
	Jun	-	\$ -
<b>Total</b>	<b>756</b>	<b>\$ 2,209</b>	<b>\$ 2.921</b>
<b>FY 2009- 2010</b>	Jul	-	\$ -
	Aug	-	\$ -
	Sep	-	\$ -
	Oct	83	\$ 156
	Nov	-	\$ -
	Dec	129	\$ 257
	Jan	38	\$ 80
	Feb	58	\$ 133
	Mar	108	\$ 247
	Apr	69	\$ 158
	May	77	\$ 177
	Jun	-	\$ -
<b>Total</b>	<b>562</b>	<b>\$ 1,209</b>	<b>\$ 2.149</b>

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**Middle Gate Elementary School Utility Data**

<b>Water</b>		<b>1,000 US Gal</b>	<b>Cost</b>	<b>\$/1,000 US Gal</b>
<b>FY 2010- 2011</b>	Jul	4	\$ 180	\$ 45.075
	Aug	8	\$ 201	\$ 25.068
	Sep	50	\$ 413	\$ 8.261
	Oct	86	\$ 595	\$ 6.921
	Nov	43	\$ 378	\$ 8.782
	Dec	42	\$ 373	\$ 8.871
	Jan	34	\$ 332	\$ 9.768
	Feb	40	\$ 369	\$ 9.222
	Mar	70	\$ 519	\$ 7.417
	Apr	45	\$ 402	\$ 8.934
	May	62	\$ 557	\$ 8.980
	Jun	35	\$ 405	\$ 11.558
<b>Total</b>		<b>519</b>	<b>\$ 4,723</b>	<b>\$ 9.100</b>
<b>FY 2009- 2010</b>	Jul	6	\$ 188	\$ 31.298
	Aug	6	\$ 188	\$ 31.298
	Sep	48	\$ 3,254	\$ 67.788
	Oct	56	\$ 437	\$ 7.809
	Nov	40	\$ 357	\$ 8.936
	Dec	33	\$ 323	\$ 9.773
	Jan	40	\$ 357	\$ 8.936
	Feb	32	\$ 318	\$ 9.923
	Mar	52	\$ 417	\$ 8.026
	Apr	40	\$ 357	\$ 8.936
	May	48	\$ 397	\$ 8.279
	Jun	31	\$ 317	\$ 10.223
<b>Total</b>		<b>432</b>	<b>\$ 6,911</b>	<b>\$ 15.997</b>

**RFP for Energy Performance Contracting Services**  
**Attachment E: Technical Facility Profile**

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**Building List for Potential Future Projects**

<b>Building</b>	<b>Location</b>	<b>Size (SF)</b>
Public Works	4 Turkey Hill Road	21,600
Town Hall South	3 Main Street	20,200
Multipurpose Center	14 Riverside Road	10,400
Municipal Building	3 Primrose Street	33,000
WWTP (1MGD)	24 Commerce Road	
Hawley School	29 Church Hill Road	60,460
Sandy Hook School	Dickinson Drive	69,023
Middle Gate School	7 Cold Springs Road	57,100
Head O. Meadow School	94 Boggs Hill Road	65,000
Reed Intermediate School	3 Trades Lane	165,600
Newtown Middle School	11 Queen Street	175,000
Newtown High School	12 Berkshire Road	299,190
<b>Total</b>		<b>976,573</b>

**Selection Sites**

**ATTACHMENT F – MODEL INVESTMENT GRADE AUDIT & PROJECT PROPOSAL CONTRACT**

This document is part of a collection of model procurement and contracting documents that represent best practices for state energy offices (SEOs) to launch and administer programs to increase energy efficiency through Energy Savings Performance Contracting. The documents draw from successful programs in various states and are continually updated to incorporate the latest strategies. They can be easily customized to meet the needs of any SEO or similar government department.

**DESCRIPTION –Investment Grade Audit and Project Proposal Contract:**

This Investment Grade Audit & Project Proposal Contract is the first of two contracts with the selected ESCO. The ESCO will complete an Investment Grade Audit that will include an analysis of each proposed project with projected energy and cost savings and itemized project cost. The ESCO will also propose terms for the Energy Savings Performance Contract and present a proposal that includes recommended projects, financing term and projected annual cash-flow analysis. The results of the audit will form the basis for a subsequent Energy Savings Performance Contract.

This is a model document only and does not attempt to identify or address all circumstances or conditions you may encounter or desire. Consult with your legal counsel and procurement staff to adapt it to meet your needs.

**INVESTMENT GRADE AUDIT & PROJECT PROPOSAL CONTRACT**

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**Exhibits**

**Exhibit A: Scope of Work**

**Exhibit B: Notice of Acceptance of Investment Grade Audit Report**

**Exhibit C: Guidelines for Preliminary Monitoring and Verification Plan**

**Exhibit D: Cost and Pricing for IGA Development**

**Exhibit E: Pricing for Project Proposal Development**

**Appendices**

**Appendix A RFP for ESCO Solicitation (Pre-qualification Phase; Final Selection Phase)**

**Appendix B ESCO Proposal (Pre-qualification Phase; Final Selection Phase)**

**Appendix C ESCO Base Contract (including maximum markups)**

## **INVESTMENT GRADE AUDIT & PROJECT PROPOSAL CONTRACT**

This Investment Grade Audit & Project Proposal Contract (the "Contract") is made and entered into as of \_\_\_\_\_ Date, between ESCO Name ("ESCO"), having its principal offices at ESCO Address, and Institution Name and/or name of authorizing Board hereinafter referred to as ("Institution"), Institution Address.

### **WITNESSETH**

WHEREAS, this Contract was created for use by towns to obtain an investment grade audit of a facility from a private energy service company (ESCO).

WHEREAS, Authority exists in the law of the Town to enter into this contract, and funds have been budgeted, appropriated and otherwise made available; a sufficient unencumbered balance thereof remains available for payment; and the required approval, clearance and coordination have been accomplished from and with appropriate agencies.

WHEREAS, ESCO is a company with experience and technical and management capabilities to provide for the discovery, engineering, procurement, installation, financing, savings guarantee, maintenance and monitoring of energy and water saving measures at facilities similar in size, function and system type to Town's facilities; and

WHEREAS, ESCO has submitted a ESCO Response, in response to Town's Request for Proposals (RFP), pertaining to the discovery, engineering, procurement, installation, financing, savings guarantee, maintenance and monitoring of energy and water saving measures at Town's facilities; and

WHEREAS, the Town has selected ESCO to provide the services described herein; and

WHEREAS, the Town desires to enter into a Contract to have ESCO perform an **Investment Grade Audit and Project Proposal** to determine the feasibility of entering into an **Energy Savings Performance Contract** to provide for installation and implementation of energy and water saving measures at the Town's facilities.

WHEREAS, if energy and water saving measures are determined to be feasible, and if the amount of savings can be reasonably sufficient to cover all costs, as defined by the Town, associated with an energy savings performance contracting project, the parties may to negotiate an Energy Savings Performance Contract under which the ESCO would design, procure, install, implement, maintain and monitor such energy and water saving measures. However, this intent does not commit Town to entering into such Energy Savings Performance Contract.

WHEREAS, provided the Town pays for the audit services, the Town shall have the right in its sole discretion to use the draft and final investment grade audit reports for its purposes regardless of whether the Town enters into an Energy Savings Performance Contract. Furthermore, the Town shall have the right to proceed with as many of the audit recommendations as it may deem appropriate, or not at all,

**RFP for Energy Performance Contracting Services**  
**Attachment F: Model Investment Grade Audit & Project Proposal Contract**

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THEREFORE, the parties agree as follows:

**1. Investment Grade Audit and Project Proposal Contract**

ESCO agrees to perform an Investment Grade Audit in accordance with the Scope of Work described below. ESCO agrees to complete the Investment Grade Audit and tender to Institution a final report within Number of Days –120 days recommended depending on size and complexity of facilities and time needed to review the audit calendar days from the execution of this Contract.

Institution agrees to assist the ESCO in performing the Investment Grade Audit in accordance with the Scope of Work described below. Institution agrees to work diligently to provide full and accurate information. ESCO agrees to work diligently to assess validity of information provided and to confirm or correct the information as needed. The parties contemplate that this will be an iterative process and that Institution will have a reasonable amount of time to review and determine acceptance before issuing the **Notice of Acceptance (Exhibit B: Notice of Acceptance of Investment Grade Audit Report)**.

ESCO agrees to offer an **Energy Savings Performance Contract Proposal** with a package of energy and water saving measures and with details as specified in the Scope of Work below.

**2. Compensation to ESCO**

ESCO shall be compensated as follows:

- a. **Basis and Maximum Amount.** Except as provided for in **Subsections 2(b), 2(c), or 2(d)** below, within Number of Days: 120 days recommended days after Institution's acceptance of the final **Investment Grade Audit and Project Proposal Contract**, Institution shall pay to ESCO a sum not to exceed Dollar Amount in Words (\$ dollar amount) based on a maximum of square footage to be audited gross square feet at cost per square foot per square foot of audited square-footage, as per **Exhibit D: Cost and Pricing for IGA Development**. Institution shall only pay for square-footage actually audited. Areas deemed by ESCO not to be audited will not be charged to Institution.
- b. **Payment through Performance Contract.** Institution shall have no payment obligations under this contract provided that ESCO and Institution execute an Energy Savings Performance Contract within Number of Days – 120 days suggested, allowing sufficient time for contract negotiation, attorney review, and Institution processing days, after issuance of the **Notice of Acceptance (Exhibit B: Notice of Acceptance of Investment Grade Audit Report)** of the final **Investment Grade Audit and Project Proposal Contract**, but the fee indicated above shall be incorporated into ESCO's project costs in the Energy Savings Performance Contract and paid through the Energy Savings Performance Contract funding mechanisms.
- c. **Project With Insufficient Savings.** Institution shall have no payment obligations under this Contract in the event that ESCO's final **Investment Grade Audit and Project Proposal Contract** does not contain a package of energy and water saving measures which, if implemented and as meeting terms of **Exhibit A: Scope of Work, (b) Guidelines and Requirements**, will provide the Institution with cash savings sufficient to fund Institution's payments of all costs and fees associated with the Energy Savings Performance Contract, including 1) the fee associated with the Investment Grade Audit, 2) all monthly payments on a lease purchase agreement to finance the measures, 3) any annual fees for monitoring and maintenance incurred by the ESCO.

**RFP for Energy Performance Contracting Services**  
**Attachment F: Model Investment Grade Audit & Project Proposal Contract**

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Should the ESCO determine at any time during the Investment Grade Audit that savings cannot be attained to meet these terms, the Investment Grade Audit will be terminated by written notice by the ESCO to Institution. In this event this Contract shall be cancelled and Institution shall have no obligation to pay, in whole or in part, the amount specified in this **Section 2(a)**.

**2. Scope of Work**

The Investment Grade Audit and Energy Savings Performance Proposal Contract shall be performed as described in **Exhibit A: Scope of Work**.

**3. Termination**

This Contract may be terminated at any time as described below by:

**a. Termination for Default/Cause**

**1) Default.**

If the ESCO refuses or fails to timely perform any of the provisions of this contract, with such diligence as will ensure its completion within the time specified in this contract, the Town may notify the ESCO in writing of the non-performance, and if not promptly corrected within the time specified, may terminate the ESCO's right to proceed with the contract or such part of the contract as to which there has been delay or a failure to properly perform. The ESCO shall continue performance of the contract to the extent it is not terminated and shall be liable for excess costs incurred in procuring similar goods or services elsewhere.

**2) ESCO's Duties**

Notwithstanding termination of the contract and subject to any directions from the Town, the ESCO shall take timely, reasonable and necessary action to protect and preserve property in the possession of the ESCO in which the Town has an interest.

**3) Compensation**

Payment for completed services delivered and accepted by the Town shall be at the contract price. The Town may withhold amounts due to the ESCO as it deems to be necessary to protect the Town against loss because of outstanding liens or claims of former lien holders and to reimburse the Town for the excess costs incurred in procuring similar goods and services.

**4) Excuse for Nonperformance or Delayed Performance**

The ESCO shall not be in default by reason of any failure in performance of this contract in accordance with its terms if such failure arises out of acts of God; acts of the public enemy; acts of the State and any governmental entity in its sovereign or contractual capacity; fires; floods; epidemics; quarantine restrictions; strikes or other labor disputes; freight embargoes; or unusually severe weather. Upon request of the ESCO, the Town shall ascertain the facts and extent of such failure, and, if the Town determines that any failure to perform was occasioned by any one or more of the excusable causes, and that, but for the excusable cause, the ESCO's progress and performance would have met the terms of the contract, the delivery schedule shall be revised accordingly, subject to the rights of the purchasing Town.

**5) Erroneous Termination for Default**

If after notice of termination of the ESCO's right to proceed under the provisions of this clause, it is determined for any reason that the ESCO was not in default under the provisions of this clause, or that the delay was excusable, the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to the termination for convenience clause.

**RFP for Energy Performance Contracting Services**  
**Attachment F: Model Investment Grade Audit & Project Proposal Contract**

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**b. Termination for Convenience**

**1) Termination**

The Institution may, when the interests of the institution so require, terminate this contract in whole or in part, for the convenience of the institution. The Institution shall give written notice of the termination to the ESCO specifying the part of the contract terminated and when termination becomes effective. This in no way implies that the purchasing institution has breached the contract by exercise of the Termination for Convenience Clause.

**2) ESCO's Obligations**

The ESCO shall incur no further obligations in connection with the terminated work and on the date set in the notice of termination the ESCO will stop work to the extent specified. The ESCO shall also terminate outstanding orders and subcontracts as they relate to the terminated work. The ESCO shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated work. The Institution may direct the ESCO to assign the ESCO's right, title, and interest under terminated orders or subcontracts to the purchasing institution. The ESCO must still complete and deliver to the purchasing institution the work not terminated by the Notice of Termination and may incur obligations as are necessary to do so.

**3) Compensation**

- a)** The ESCO shall submit a termination claim specifying the amounts due because of the termination for convenience together with cost or pricing data bearing on such claim. If the ESCO fails to file a termination claim within 90 days from the effective date of termination, the Institution may pay the ESCO, if at all, an amount set in accordance with subparagraph C of this Section.
- b)** The Institution and the ESCO may agree to a settlement provided the ESCO has filed a termination claim supported by cost or pricing data and that the settlement does not exceed the total contract price plus settlement costs, reduced by payments previously made by the purchasing institution, the proceeds of any sales of supplies and manufactured materials made under agreement, and the contract price of the work not terminated.
- c)** Absent complete agreement, under subparagraph B of this Section, the Institution shall pay the ESCO the following amounts, provided the payments agreed to under subparagraph B shall not duplicate payments under this subparagraph:
  - (1)** Contract prices for supplies or services accepted under the contract;
  - (2)** Costs incurred in preparing to perform the terminated portion of the work plus a fair and reasonable profit on such portion of the work (such profit shall not include anticipatory profit or consequential damages) less amounts paid to or to be paid for accepted supplies or services; provided, however, that if it appears that the ESCO would have been sustained a loss if the entire contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss.
- (3)** Costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to the ESCO's obligations paragraph of this clause. These costs must not include costs paid in accordance with subparagraph B of this Section.
- (4)** The reasonable settlement costs of the ESCO including accounting, legal, clerical, and other expenses reasonably necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of the contract and for the termination and settlement of subcontracts there under, together with



**RFP for Energy Performance Contracting Services**  
**Attachment F: Model Investment Grade Audit & Project Proposal Contract**

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reasonable storage, transportation, and other costs incurred in connection with the terminated portion of this contract.

- (5) The total sum to be paid the ESCO under this subparagraph C shall not exceed the total contract price plus settlement costs, reduced by the amount of payments otherwise made, the proceeds of any sales of supplies and manufacturing materials under subparagraph B, and the contract price of work not terminated.
- d) Cost claimed or agreed to under this section shall be in accordance with applicable sections of the State Procurement Code.

**c. Available Funds – Contingency - Remedies**

The Town is prohibited by law from making fiscal commitments beyond the term of its current fiscal period. Therefore, ESCO's compensation is contingent upon the continuing availability of Town appropriations. Payments pursuant to this contract shall only be made from available funds encumbered for this Contract, and the Town's liability for such payments shall be limited to the amount remaining of such encumbered funds. If funds are not appropriated, or otherwise become unavailable to fund this Contract, the Town may immediately terminate the Contract in whole or in part without further liability in accordance with the Termination for Cause subsection of the Remedies section of this Contract. All payments are subject to the general Remedies section of this Contract.

**5. Insurance**

Coordinate insurance requirements and amounts of coverage with existing policy amounts and coverage's and modify below as needed.

Before commencing any Work under this Contract, ESCO shall file with Institution certificates of insurance evidencing the coverage's as specified below:

- a. It is agreed and understood ESCO shall maintain in full force and effect adequate commercial general liability insurance and property damage insurance, as well as workmen's compensation and employer's liability insurance pursuant to the State insurance requirements as defined below.
- b. The ESCO shall obtain, and maintain at all times during the term of this Agreement, insurance in the following kinds and amounts.
  - 1) Standard Workers' Compensation and Employer's Liability as required by State statute, including occupational disease, covering all employees at the work site.
  - 2) General Liability (minimum coverage)
    - a) Combined single limit of \$600,000 written on an occurrence basis.
    - b) Any aggregate limit will not be less than \$1,000,000.
    - c) The ESCO must purchase additional insurance if claims reduce the annual aggregate below \$600,000.
  - 3) Automobile Liability (minimum coverage) in the amount of \$600,000 combined single limit
  - 4) The Institution shall be named as an additional insured on each commercial general liability policy.
  - 5) The insurance shall include provisions preventing cancellation without 30 calendar days prior written notice, by certified mail to the Principal Representative
  - 6) ESCO shall be responsible for all claims, damages, losses or expenses, including attorney's fees, arising out of or resulting from the performance of the Services contemplated in this Contract, provided that any such claim, damage, loss or expense

**RFP for Energy Performance Contracting Services**  
**Attachment F: Model Investment Grade Audit & Project Proposal Contract**

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is caused by any negligent act, error or omission of ESCO, any Consultant or associate thereof, or anyone directly or indirectly employed by ESCO. ESCO shall submit a Certificate of Insurance at the signing of this Contract and also any notices of Renewal of said Policy as they occur.

**6. Energy Savings Performance Contract**

The Parties intend to negotiate an Energy Savings Performance Contract under which the ESCO will design, install and implement energy and water saving measures which the Parties have agreed to, and provide certain maintenance and monitoring services. However, nothing in this Contract should be construed as an obligation on any of the Parties to execute such a contract. The terms and provisions of such an Energy Savings Performance Contract will be set forth in a separate contract.

**7. Extent of Agreement**

- a. This Contract represents the entire agreement between the Town and ESCO and supersedes all prior negotiations, representations or agreements, either written or oral. This Contract may be amended only by written instrument signed by the Town.
- b. The Town and ESCO understand and agree the attachment and exhibits hereto are and shall be an integral part of this Contract and the terms and provisions thereof are hereby incorporated, made a part of and shall supplement those recited herein. In the event of any conflict, or variance, the terms and provisions of this printed Agreement shall supersede, govern and control.

**8. Term**

The term of this Contract will become effective upon approval by the Town Manager and acceptance by the ESCO's Principal Representative. The term shall end number of days plus 15 days to allow for processing of check (suggest 135 days) after signing of the **Notice of Acceptance (Exhibit B)** of the Final Investment Grade Audit Report by the Principal Representative.

**9. Order of Precedence**

In the event of conflict or inconsistency between this contract and its exhibits or attachments, such conflicts or inconsistencies shall be resolved by reference to the documents in the following order of priority:

1. State Special Provisions. *These Special Provisions are required for State institution/institution projects.*
2. Town of Newtown Code of Ordinances
3. Contract - general terms and conditions
4. Exhibits or attachments

**10. Institution's Special Provisions**

Coordinate with Town for applicable provisions.

**RFP for Energy Performance Contracting Services**  
**Attachment F: Model Investment Grade Audit & Project Proposal Contract**

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THE PARTIES HERE HAVE EXECUTED THIS CONTRACT

IN WITNESS WHEREOF, and intending to be legally bound, the parties hereto subscribe their names to this Contract on the date first written above.

Institution

By \_\_\_\_\_  
Principal Representative

(Corporate Seal)

ESCO

By: \_\_\_\_\_

ATTEST

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Address

\_\_\_\_\_  
City, State, Zip

\_\_\_\_\_  
Social Security Number or Federal ID Number

**APPROVED:**

**RFP for Energy Performance Contracting Services**  
**Attachment F: Model Investment Grade Audit & Project Proposal Contract**

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**EXHIBIT A**  
**Scope of Work**

NOTE: It is tempting to develop a prescribed scope of work for the ESCO, detailing exactly what projects the ESCO should undertake in your facilities. This is not recommended, however, because it is very valuable to use the ESCO's technical expertise to help identify and assess the opportunities that are most cost-effective or most valuable for your facilities instead of pre-determining the scope.

a. **Process**

This will be an interactive approach in working with Institution, following these steps:

- 1) Preliminary Assessment of Needs and Opportunities
  - a) Meet with Institution to establish interests, plans, problems, etc. related to facilities and operation of facilities.
  - b) Collect data and background information on buildings, equipment and facilities operation
  - c) Perform a preliminary walk-through of facilities and interview staff and occupants to identify potential measures
  - d) Meet with Institution to present preliminary findings and establish agreement on measures to analyze
- 2) Preliminary Analysis of Measures
  - a) Establish base year consumption and reconcile with end-use consumption estimates
  - b) Conduct a preliminary analysis of potential measures
  - c) Meet with Institution to present preliminary findings and establish agreement on measures to further analyze
  - d) See ENERGY STAR below.
- 3) Further Analysis and Audit Report
  - a) Further analyze measures
  - b) Develop a preliminary Investment Grade Audit Report
  - c) Meet with Institution to present results
  - d) Prepare final Investment Grade Audit Report
- 4) Energy Savings Performance Contract Proposal
  - a) Develop Energy Savings Performance Contract proposal
  - b) Meet with Institution to present results and negotiate final terms

b. **Scope Guidelines and Requirements**

- 1) Energy Savings Performance Contract Term. The Energy Savings Performance Contract Term shall have a term no greater than 25 years and no greater than the cost-weighted average lifetime of the equipment. Institution's goal is for a term no greater than Desired Financing Term years.

NOTE: Refer to legislation where the maximum financing term may be set. A generally recognized maximum is 25 years, as used by the federal government. A

**RFP for Energy Performance Contracting Services**  
**Attachment F: Model Investment Grade Audit & Project Proposal Contract**

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typical term is 12-17 years and is governed by financing availability, longevity of installed measures, and ability for savings to allow a cash-flow to pay for the desired scope of projects. The ESC recommends not to otherwise restrict the financing term at this stage as it reduces the project potential.

- 2) Annual Guaranteed Energy and Cost Savings. The annual guarantee is required for the entire financing term; however Institution has the option to terminate the guarantee at any time after the first three years of the contract term provided the annual guaranteed energy and cost savings were achieved each prior year. The guarantee is based on cost savings attributable to all energy saving measures, and must equal or exceed all project costs each year during the contract period. Annual project costs include debt service, ESCO fees, maintenance services, monitoring services, and other services.
- 3) ESCO shall reserve up to 2% of annually guaranteed savings for Institution to hire an independent third-party professional to review the ESCO's monitoring and verification reports and advise Institution of compliance in monitoring and verifying savings.
- 4) Excess Savings. Annual cost savings beyond the guaranteed minimum savings will be retained by Institution, and will not be allocated to shortfalls in other years.
- 5) Annual Savings Estimates: The annual savings estimates for all measures must be estimated for each year during the contract period.
- 6) Allowable cost and savings factors approved for consideration. Institution will provide ESCO with sufficient guidance to develop savings estimates.
  - a) Payment sources that can be incorporated:
    1. Energy and water cost savings
    2. Material/commodity savings, including scheduled replacement of parts (only for years that these cost savings are applicable)
    3. Outside labor cost savings, including maintenance contracts
    4. In-house labor costs
    5. Deferred maintenance cost
    6. Offset of future capital cost
    7. Outside incentive funds (utility incentives, grants, etc.)
    8. Any savings related to maintenance and operation of the facilities will be limited to those that can be thoroughly documented.
  - b) Payment sources that may also be considered and negotiated:
  - c) Additional factors related to establishing savings that cover all costs:
    1. Escalation rates that apply to each payment source. These are rates to be used in cash flow projections for project development purposes. NOTE: Use federal government guidelines on utility escalation rates to ensure reasonableness.
    2. Interest rates (municipal tax-exempt rates for public institutions)
    3. Institution cash outlay (Institution's sole discretion)
  - d) The markup costs are presented in **Exhibit D: Cost and Pricing for IGA Development**. These rates will be used in the Investment Grade Audit and subsequent Energy Savings Performance Contract.

**RFP for Energy Performance Contracting Services**  
**Attachment F: Model Investment Grade Audit & Project Proposal Contract**

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- c. **Collect data and background information from Institution** concerning facility operation and energy use for the most recent three years from the effective date of this Contract as follows.

- 1) Building square footage.
- 2) Construction data of buildings and major additions including building envelope
- 3) Utility company invoices
- 4) Occupancy and usage information
- 5) Description of all energy-consuming or energy-saving equipment used on the premises, as available.
- 6) Description of energy management procedures utilized on the premises
- 7) Description of any energy-related improvements made or currently being implemented
- 8) Description of any changes in the structure of the facility or energy-using or water-using equipment
- 9) Description of future plans regarding building modifications or equipment modifications and replacements
- 10) Drawings, as available (may include mechanical, plumbing, electrical, building automation and temperature controls, structural, architectural, modifications and remodels)
- 11) Original construction submittals and factory data (specifications, pump curves, etc.), as available
- 12) Operating engineer logs, maintenance work orders, etc., as available
- 13) Records of maintenance expenditures on energy-using equipment, including service contracts
- 14) Prior energy audits or studies, if any

Institution agrees to work diligently to furnish ESCO, upon request, accurate and complete data and information as available. Where information is not available from Institution, ESCO will make a diligent effort to collect such information through the facility inspection, staff interviews, and utility companies.

ESCO agrees to work diligently to assess validity of information provided and to confirm or correct the information as needed.

- d. **Identify potential measures**

- 1) Interview the facility manager, maintenance staff, subcontractors and occupants of each building regarding:
  - a) Facility operation, including energy management procedures
  - b) Equipment maintenance problems
  - c) Comfort problems and requirements
  - d) Equipment reliability
  - e) Projected equipment needs
  - f) Occupancy and use schedules for the facility and specific equipment.
  - g) Facility improvements – past, planned and desired
- 2) Survey major energy-using equipment, including lighting (indoor and outdoor), heating and heat distribution systems, cooling systems and related equipment, automatic temperature control systems and equipment, air distribution systems and equipment,

**RFP for Energy Performance Contracting Services**  
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outdoor ventilation systems and equipment; exhaust systems and equipment; hot water systems, electric motors, transmission and drive systems, special systems (kitchen/dining equipment, etc.), renewable energy systems, other energy using systems, water consuming systems (restroom fixtures, water fountains, irrigation systems, etc.)

- 3) Perform "late-night" surveys outside of normal business hours or on weekends to confirm building system and occupancy schedules, if deemed necessary.
- 4) Develop a preliminary list of potential energy and water saving measures. Consider the following for each system:
  - a) Comfort and maintenance problems
  - b) Energy use, loads, proper sizing, efficiencies and hours of operation
  - c) Current operating condition
  - d) Remaining useful life
  - e) Feasibility of system replacement
  - f) Hazardous materials and other environmental concerns
  - g) Institution's future plans for equipment replacement or building renovations
  - h) Facility operation and maintenance procedures that could be affected
  - i) Capability to monitor energy performance and verify savings

Institution will allow ESCO reasonable access to facility staff to ensure understanding of existing systems and opportunities.

ESCO agrees to work diligently to assess validity of information provided and to confirm or correct the information as needed.

**e. Establish base year consumption and reconcile with end use consumption estimates.**

- 1) Establish base year consumption by examining utility bills for the past three years for electricity, gas, steam, water, etc. Present base year consumption in terms of energy units (kWh, kW, ccf, Therms, gallons, or other units used in bills), in terms of dollars, and in terms of dollars per square foot. Describe the process used to determine the base year (averaging, selecting most representative contiguous 12 months, etc.). Consult with facility personnel to account for any anomalous schedule or operating conditions on billings that could skew the base year representation. ESCO will account for periods of time when equipment was broken or malfunctioning in calculating the base year.
- 2) Estimate loading, usage and/or hours of operation for all major end uses of total facility consumption including, but not limited to: lighting, heating, cooling, motors (fans and pumps), plug loads, and other major energy and water using equipment. Where loading or usage are highly uncertain (including variable loads such as cooling), ESCO will use its best judgment, spot measurements or short-term monitoring. ESCO should not assume that equipment run hours equal the operating hours of the building(s) or facility staff estimates.
- 3) Reconcile annual end-use estimated consumption with the annual base year consumption. This reconciliation will place reasonable "real-world" limits on potential savings.
- 4) Propose adjustments to the baseline for energy and water saving measures that will be implemented in the future.

**f. Develop a preliminary analysis of potential energy and water saving measures.**

**RFP for Energy Performance Contracting Services**  
**Attachment F: Model Investment Grade Audit & Project Proposal Contract**

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This list shall be compiled and submitted to Institution within 90 calendar days of the execution of this Contract.

- 1) List all potential opportunities, whether cost-effective or not. Consider technologies in a comprehensive approach including, but not limited to: lighting systems, heating/ventilating/air conditioning equipment and distribution systems, controls systems, building envelope, motors, kitchen equipment, pools, renewable energy systems, other special equipment, irrigation systems, and water saving devices.
  - 2) Identify measures which appear likely to be cost effective and therefore warrant detailed analysis
  - 3) For each measure, prepare a preliminary estimate of energy or water cost savings including description of analysis methodology, supporting calculations and assumptions used to estimate savings.
- g. **Meet with Institution to present preliminary findings** prior to thorough analysis. Describe how the projected project economics meet the Institution's terms for completing the Investment Grade Audit and Proposal Contract. Discuss assessment of energy use, savings potential, project opportunities, and potential for developing an Energy Savings Performance Contract. Develop a list of recommended measures for further analysis. The Institution shall have the option to reject calculations of savings, potential savings allowed, or project recommendations.
- h. **Analyze savings and costs for each energy and water saving measure.**
- 1) Follow the methodology of ASHRAE or other nationally-recognized authority following the engineering principle(s) identified for each retrofit option
  - 2) Utilize assumptions, projections and baselines which best represent the true value of future energy or operational savings. Include accurate marginal costs for each unit of savings at the time the audit is performed, documentation of material and labor cost savings, adjustments to the baseline to reflect current conditions at the facility, calculations which account for the interactive effects of the recommended measures.
  - 3) Use best judgment regarding the employment of instrumentation and recording durations so as to achieve an accurate and faithful characterization of energy use
  - 4) Use markups and fees stated above in all cost estimates.
  - 5) Develop a preliminary measurement and verification plan for each measure
  - 6) Follow additional guidelines for analysis and report preparation given below
  - 7) Include cost to provide services and complete application for Energy Star Label, LEED-EB certification for Existing Buildings, or other certification. Also include cost for EPA's Tools for Schools or other such program related to improved air quality.
- i. **Prepare Draft Investment Grade Audit Reports.** The reports provide an engineering and economic basis for negotiating a potential Energy Savings Performance Contract between the Institution and the ESCO. They shall be submitted at 30%, 60%, and 90% completion levels. The detailed requirements for each submission will be discussed with the ESCO prior to commencing with the IGA. The reports shall be completed within **90** calendar days of the date of execution of this Contract. The reports shall include:
- 1) Overview
    - a) Contact information
    - b) Summary table of recommended energy and water saving measures, with itemization for each measure of total design and construction cost, annual



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- maintenance costs, the first year cost avoidance (in dollars and energy units), simple payback and equipment service life
  - c) Summary of annual energy and water use by fuel type and costs of existing or base year condition
  - d) Calculation of cost savings expected if all recommended measures are implemented and total percentage savings of total facility energy cost.
  - e) Description of the existing facility, mechanical and electrical systems
  - f) Summary description of measures, including estimated costs and savings for each as detailed above
  - g) Discussion of measures considered but not investigated in detail
  - h) Conclusions and recommendations
- 2) Base year energy use
- a) Description and itemization of current billing rates, including schedules and riders.
  - b) Summary of all utility bills for all fuel types and water
  - c) Identification and definition of base year consumption and description of how established
  - d) Reconciliation of estimated end use consumption (i.e. lighting, cooling, heating, fans, plug loads, etc) with base year (include discussion of any unusual findings)
- 3) Full description of each energy and water saving measure including:
- a) Written description
    - (1) Existing conditions
    - (2) Description of equipment to be installed and how it will function
    - (3) Include discussion of facility operations and maintenance procedures that will be affected by installation/implementation.
    - (4) Present the plan for installing or implementing the recommendation.
  - b) Savings calculations
    - (1) Base year energy use and cost
    - (2) Post-retrofit energy use and cost
    - (3) Savings estimates including analysis methodology, supporting calculations and assumptions used.
    - (4) Annual savings estimates. The cost savings for all energy saving measures must be estimated for each year during the contract period. Savings must be able to be achieved each year (cannot report average annual savings over the term of the contract).
    - (5) Savings estimates must be limited to savings allowed by the Institution as described above.
    - (6) Percent cost-avoidance projected
    - (7) Description and calculations for any proposed rate changes
    - (8) Explanation of how savings interactions between retrofit options are accounted for in calculations.
    - (9) Operation and maintenance savings, including detailed calculations and description. Ensure that maintenance savings are only applied in the applicable years and only during the lifetime of the particular equipment.
    - (10) If computer simulation is used, include a short description and state key input data. If requested by Institution, access will be provided to the program and all assumptions and inputs used, and/or printouts shall be provided of all input files and important output files and included in the

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- Investment Grade Audit with documentation that explains how the final savings figures are derived from the simulation program output printouts
- (11) If manual calculations are employed, formulas, assumptions and key data shall be stated.
  - (12) Conclusions, observations, caveats
  - c) Cost estimate -- detailed scope of the construction work needed, suitable for cost estimating. Include all anticipated costs associated with installation and implementation. Provide specifications for major mechanical components as well as detailed lighting and water fixture counts.
    - (1) Engineering/design costs
    - (2) ESCO/vendor estimates for labor, materials, and equipment; include special provisions, overtime, etc., as needed to accomplish the work with minimum disruption to the operations of the facilities.
    - (3) Permit costs
    - (4) Construction management fees
    - (5) Environmental costs or benefits (disposal, avoided emissions, handling of hazardous materials, etc.)
    - (6) Note that all markups and fees stated in this Contract shall be used in the cost estimates, unless otherwise documented and justified due to change in scope or size of project or other unforeseen circumstances.
    - (7) Conclusions, observations, caveats
    - (8) Other cost categories as defined above under “markups” in Section 3b above.
  - d) Other
    - (1) Estimate of average useful service life of equipment
    - (2) Preliminary commissioning plan (as outlined in **Energy Savings Performance Contract – Schedules**)
    - (3) Preliminary measurement and verification plan, following the International Performance Measurement and Verification Protocol (IPMVP), explaining how savings from each measure is to be measured and verified (stipulated by Contract, utility bill analysis, end-use measurement and calculation, etc.). The Preliminary M&V plan shall follow the format provided in **Exhibit C: Savings Measurement and Verification Plan**.
    - (4) Discussion of impacts that facility would incur after contract ends. Consider operation and maintenance impacts, staffing impacts, budget impacts, etc., and identify who is responsible for maintenance.
    - (5) Compatibility with existing systems. NOTE: Include the name of the existing controls system, if new controls systems will have to be compatible with an existing brand of controls. Also note if a sole-source vendor is established for controls systems.
    - (6) Complete appendices that document the data used to prepare the analyses. Describe how data were collected.
  - j. **Meet with Institution** to:  
Review the recommendations, savings calculations and impact of the measures on the operations of the facility. Describe how the projected project economics meet the Institution’s terms for completing the Investment Grade Audit and Performance Contract Proposal.

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Discuss the willingness and capability of Institution to make capital contributions to the project to improve the economics of the overall project.

- k. **Revise Audit as directed by Institution.**
- l. **Prepare an Energy Savings Performance Contract Proposal (Term Sheet).** In anticipation of ESCO and Institution entering into an Energy Savings Performance Contract to design, install, and monitor the energy and water saving measures proposed in the Investment Grade Audit Report, ESCO shall prepare a proposal for terms to be incorporated in a Energy Savings Performance Contract to include:
- 1) Project Price is the total amount Institution will pay for the project and ESCO's services. The price must be consistent with maximum markups, margins and fees established in **Exhibit D: Cost and Pricing for IGA Development** and the pricing margins established in **Exhibit E: Pricing for Project Proposal Development**. Costs may include but are not limited to: engineering, designing, packaging, procuring, installing (from Investment Grade Audit Report results); performance/payment bond costs; construction management fees; commissioning costs; maintenance fees; monitoring fees; training fees; legal services; overhead and profit; other markups.
  - 2) Include a List of Services that will be provided as related to each cost.
  - 3) Expected term of the Energy Savings Performance Contract.
  - 4) Description of how the project will be financed including available interest rates and financing terms, based on interest rates likely available to Institution at this time, and based on a 60-day and 90-day lock option.
  - 5) Explanation of how the savings will be calculated and adjusted due to weather (such as heating and cooling degree days), occupancy or other factors. Monitoring and verification methods must be consistent with the latest version of the *International Performance Monitoring and Verification Protocol* and **Exhibit C: Savings Measurement and Verification Plan**.
  - 6) Analysis of annual cash flow for Institution during the contract term.
- m. **Utilize ENERGY STAR Tools** ESCO shall provide a Portfolio Manager rating and energy performance target score estimate. For each eligible building, ESCO shall provide a pre-retrofit Energy Performance Rating using EPA ENERGY STAR's Portfolio Manager, the weather normalized energy intensity in kBtu/SF, and an estimated post-retrofit Energy Performance Rating. If the building type is not eligible for rating in Portfolio Manager, then the normalized source EUI will suffice. ESCO shall provide a completed Cash Flow Opportunity Calculator (CFO Calculator) for the project, with variables inserted that represent the most likely options available to the customer. This will enable the ESCO and the customer to have an agreed-upon format for discussing project financing options and the potential costs of project delays. The CFO Calculator will be provided in both hard copy and electronic format, so that the agency can run its own analyses on financing options in the agreed format. ESCO will submit a completed Cash Flow Opportunity spreadsheet using the Cash Flow Opportunity Calculator (CFO Calculator) for the total project which shall include all facilities to be improved.

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**EXHIBIT B**

**Notice of Acceptance of Investment Grade Audit Report**

Notice of Acceptance

Date of Notice \_\_\_\_\_

Notice is hereby given that ***Institution*** accepts the Investment Grade Audit and Project Development Proposal by ESCO, as contemplated in **Section 2 of the Investment Grade Audit and Project Proposal Contract** dated \_\_\_\_\_.

Institution Name

By \_\_\_\_\_

Date

When completely executed, this form is to be sent by certified mail to the ESCO by Institution Name.

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**EXHIBIT C**

**Guidelines for Preliminary Monitoring and Verification Plan**

Prepare the M&V Plan as outlined below.

**List of Processes and Tables:**

**Risk, Responsibility and Performance Matrix**

**M&V Plan and Savings Calculation Methods**

- Proposed Annual Savings Overview
- Site Use and Savings Overview (Optional)
- M&V Plan Summary
- Schedule of Verification Reporting Activities
- Proposed Annual Savings For ECM
- Expected Year 1 Savings for ECM
- ENERGY STAR Ratings

**Risk, Responsibility and Performance Matrix.**

The ESCO shall complete and include the matrix below to summarize the allocation of responsibility for key items related to M&V.

**RISK, RESPONSIBILITY AND PERFORMANCE MATRIX**

RESPONSIBILITY/DESCRIPTION	CONTRACTOR PROPOSED APPROACH
<b>1. Financial</b>	
<b>a. Interest rates:</b> Neither the contractor nor the Institution has significant control over prevailing interest rates. Higher interest rates will increase project cost, financing/project term, or both. The timing of the TO signing may impact the available interest rate and project cost.	
<b>b. Construction costs:</b> The contractor is responsible for determining construction costs and defining a budget. In a fixed-price design/build contract, the Institution assumes little responsibility for cost overruns. However, if construction estimates are significantly greater than originally assumed, the contractor may find that the project or measure is no longer viable and drop it before TO award. In any design/build contract, the Institution loses some design control. <b>Clarify design standards and the design approval process (including changes) and how costs will be reviewed.</b>	
<b>c. M&amp;V confidence:</b> The Institution assumes the responsibility to determine the confidence that it desires to have in the M&V program and energy savings determinations. The desired confidence will be reflected in the resources required for the M&V program, and the ESCO must consider the requirement prior to submittal of the final proposal. <b>Clarify how project savings are being verified (e.g., equipment performance, operational factors, energy use) and the impact on M&amp;V costs.</b>	

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<p><b>d. Energy Related Cost Savings:</b> The Institution and the contractor may agree that the project will include savings from <i>recurring</i> and/or <i>one-time</i> costs. This may include one-time savings from avoided expenditures for projects that were appropriated but will no longer be necessary. Including one-time cost savings before the money has been appropriated may involve some risk to the Institution. Recurring savings generally result from reduced O&amp;M expenses or reduced water consumption. These O&amp;M and water savings must be based on actual spending reductions. <b>Clarify sources of non-energy cost savings and how they will be verified.</b></p>	
<p><b>e. Delays:</b> Both the contractor and the Institution can cause delays. Failure to implement a viable project in a timely manner costs the Institution in the form of lost savings, and can add cost to the project (e.g., construction interest, re-mobilization). <b>Clarify schedule and how delays will be handled.</b></p>	
<p><b>f. Major changes in facility:</b> The Institution controls major changes in facility use, including closure. <b>Clarify responsibilities in the event of a premature facility closure, loss of funding, or other major change.</b></p>	
<p><b>2. Operational</b></p>	
<p><b>a. Operating hours:</b> The Institution generally has control over operating hours. Increases and decreases in operating hours can show up as increases or decreases in "savings" depending on the M&amp;V method (e.g., operating hours multiplied by improved efficiency of equipment vs. whole-building/utility bill analysis). <b>Clarify whether operating hours are to be measured or stipulated and what the impact will be if they change.</b> If the operating hours are stipulated, the baseline should be carefully documented and agreed to by both parties.</p>	
<p><b>b. Load:</b> Equipment loads can change over time. The Institution generally has control over hours of operation, conditioned floor area, intensity of use (e.g., changes in occupancy or level of automation). Changes in load can show up as increases or decreases in "savings" depending on the M&amp;V method. <b>Clarify whether equipment loads are to be measured or stipulated and what the impact will be if they change.</b> If the equipment loads are stipulated, the baseline should be carefully documented and agreed to by both parties.</p>	
<p><b>c. Weather:</b> A number of energy efficiency measures are affected by weather. Neither the contractor nor the Institution has control over the weather. Should the Institution agree to accept risk for weather fluctuations, it shall be contingent upon aggregate payments not exceeding aggregate savings. <b>Clearly specify how weather corrections will be performed.</b></p>	
<p><b>d. User participation:</b> Many energy conservation measures require user participation to generate savings (e.g., control settings). The savings can be variable and the contractor may be unwilling to invest in these measures. <b>Clarify what degree of user participation is needed and utilize monitoring and training to mitigate risk.</b> If performance is stipulated, document and review assumptions carefully and consider M&amp;V to confirm the capacity to save (e.g., confirm that the controls are functioning properly).</p>	
<p><b>3. Performance</b></p>	
<p><b>a. Equipment performance:</b> The contractor has control over the selection of equipment and is responsible for its proper installation, commissioning, and performance. The contractor has responsibility to demonstrate that the new improvements meet expected performance levels including specified equipment capacity, standards of service, and efficiency. <b>Clarify who is responsible for initial and long-term performance, how it will be verified, and what will be done if performance does not meet expectations.</b></p>	

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<b>b. Operations:</b> Performance of the day-to-day operations activities is negotiable and can impact performance. However, the contractor bears the ultimate risk regardless of which party performs the activity. <b>Clarify which party will perform equipment operations, the implications of equipment control, how changes in operating procedures will be handled, and how proper operations will be assured.</b>	
<b>c. Preventive Maintenance:</b> Performance of day-to-day maintenance activities is negotiable and can impact performance. However, the contractor bears the ultimate risk regardless of which party performs the activity. <b>Clarify how long-term preventive maintenance will be assured, especially if the party responsible for long-term performance is not responsible for maintenance (e.g., contractor provides maintenance checklist and reporting frequency). Clarify who is responsible for performing long-term preventive maintenance to maintain operational performance throughout the contract term. Clarify what will be done if inadequate preventive maintenance impacts performance.</b>	
<b>d. Equipment Repair and Replacement:</b> Performance of day-to-day repair and replacement of contractor-installed equipment is negotiable, however it is often tied to project performance. The contractor bears the ultimate risk regardless of which party performs the activity. <b>Clarify who is responsible for performing replacement of failed components or equipment replacement throughout the term of the contract.</b> Specifically address potential impacts on performance due to equipment failure. Specify expected equipment life and warranties for all installed equipment. Discuss replacement responsibility when equipment life is shorter than the term of the contract.	

**M&V PLAN AND SAVINGS CALCULATION METHODS OUTLINE**

Fill in the following tables or provide equivalent information.

**PROPOSED ANNUAL SAVINGS OVERVIEW**

[Include all applicable fuels/commodities for project, e.g., electric energy, electric demand, natural gas, fuel oil, coal, water, etc.]

ECM	Total energy savings (MBtu/yr)	Electric energy savings (kWh/yr)	Electric demand savings (kW/yr)*	Natural gas savings (MBtu/yr)**	Water savings (gallons/yr)	Other energy savings (MBtu/yr)**	Total energy and water cost savings, Year 1 (\$/yr)	Other energy-related O&M cost savings, Year 1 (\$/yr)	Total cost savings, Year 1 (\$/yr)
Total savings									
<b>First Year Guaranteed Cost Savings: \$</b>									
Notes *Annual electric demand savings (kW/yr) is the sum of the monthly demand savings. MBtu=10 <sup>6</sup> Btu. **If energy is reported in units other than MBtu, provide a conversion factor to MBtu for link to cost schedules (e.g., 0.003413 MBtu/kWh).									

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**SITE USE AND SAVINGS OVERVIEW**

	Total energy savings (MBtu/yr)	Electric energy savings (kWh/yr)	Electric demand savings (kW/yr)*	Natural gas savings (MBtu/yr)**	Water savings (gallons/yr)	Other energy savings (MBtu/yr)**
Total proposed project savings						
Usage for entire site**						
% Total site usage saved						
Project square footage (KSF)						
Total site square footage (KSF)						
% Total site area affected						
<b>Notes</b> MBtu=10 <sup>6</sup> Btu *Annual electric demand savings (kW/yr) is the sum of the monthly demand savings. **If energy is reported in units other than MBtu, provide a conversion factor to MBtu for link to cost schedules (e.g., 0.003413 MBtu/kWh). ***Define usage period. KSF = 10 <sup>3</sup> square feet.						

**M&V PLAN SUMMARY**

ECM No.	ECM Description	M&V Option Used*	Summary of M&V Plan

\*M&V options include A, B, C, and D of the International Performance Measurement and Verification Protocol (IPMVP).

**SCHEDULE OF VERIFICATION REPORTING ACTIVITIES**

Item	<sup>a</sup> Recommended time of submission	<sup>a</sup> Institution's review and acceptance period
Post-Installation Report	30 to 60 days after acceptance	30 days
Annual Report	30 to 60 days after annual performance period	30 days

<sup>a</sup>Times are recommended based on industry practice; modify as needed.

**PROPOSED ANNUAL SAVINGS FOR EACH ECM**

[Include all applicable fuels/commodities for project, such as: electric energy, electric demand, natural gas, fuel oil, coal, water, etc.]

	Total energy use (MBtu/yr)	Electric energy use (kWh/yr)	Electric energy cost, Year 1 (\$/yr)	Electric demand* (kW/yr)	Electric demand cost, Year 1 (\$/yr)	Natural gas use (MBtu/yr)**	Natural gas cost, Year 1 (\$/yr)	Water use (gallons/yr)	Water cost, Year 1 (\$/yr)	Other energy use (MBtu/yr)**	Other energy cost, Year 1 (\$/yr)	Other energy-related O&M costs, Year 1 (\$/yr)	Total costs, Year 1 (\$/yr)
Baseline use													
Post-													



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installation use													
Savings													

b. Notes

\*Annual electric demand savings (kW/yr) is the sum of the monthly demand savings.  
 MBtu = 10<sup>6</sup> Btu.  
 \*\*If energy is reported in units other than MBtu, provide a conversion factor to MBtu for link to cost schedules (e.g., 0.003413 MBtu/kWh).

**ECM-SPECIFIC M&V PLAN AND SAVINGS CALCULATION METHODS**

**Develop section for each ECM.**

- Summarize the scope of work, location, and how cost savings are generated. Describe source of all savings including energy, water, O&M, and other (if applicable).
- Specify the M&V guideline and option used from the International Performance Measurement and Verification Protocol (IPMVP).
- Provide an overview of M&V Activities for ECM. Explain intent of M&V plan, including what is being verified.
- Provide an overview of savings calculations methods for ECM. Provide a general description of analysis methods used for savings calculations.

**Proposed Energy and Water Savings Calculations and Methodology**

- Provide detail description of analysis methodology used. Describe any data manipulation or analysis that was conducted prior to applying savings calculations.
- Detail all assumptions and sources of data, including all stipulated values used in calculations.
- Include equations and technical details of all calculations made. (Use appendix and electronic format as necessary.) Include description of data format (headings, units, etc.).
- Details of any savings or baseline adjustments that may be required.
- Detail energy and water rates used to calculate cost savings. Provide post-acceptance performance period energy and water rate adjustment factors.
- Detail proposed savings for this energy conservation measure for post-acceptance performance period. Include table - Proposed Annual Savings for Each ECM.

**Operations and Maintenance Cost Savings**

- Provide justification for O&M cost savings. Describe how savings are generated. Detail cost savings calculations.
- Provide post-acceptance performance period other cost savings adjustment factors.

**Details of other savings (if applicable)**

- Provide justification for cost savings. Describe how savings are generated. Detail cost savings calculations.
- Provide post-acceptance performance period other cost savings adjustment factors.

**Post-Installation M&V Activities**

- Describe the intent of post-installation verification activities, including what will be verified.
- Describe variables affecting post-installation energy or water use. Include variables such as weather, operating hours, set point changes, etc. Describe how each variable will be quantified, i.e., measurements, monitoring, assumptions, manufacturer data, maintenance logs, engineering resources, etc.
- Define key system performance factors characterizing the post-installation conditions such as lighting intensities, temperature set points, etc.

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- Define requirements for Institution witnessing of measurements if different than whole project data requirements.
- Provide details of post-installation data to be collected, including: Parameters to be monitored, Details of equipment to be monitored (location, type, model, quantity, etc.), Sampling plan, including details of usage groups and sample sizes, Duration, frequency, interval, and seasonal or other requirements of measurements, Monitoring equipment to be used, Installation requirements for monitoring equipment, Calibration requirements/procedures, Expected accuracy of measurements/monitoring equipment, Quality control procedures to be used, Form of data to be collected (.xls, .csv, etc.), Sample data collection forms (optional)
- Detail data analysis to be performed.

**Post-Acceptance Performance Period Verification Activities**

- Describe variables affecting post-acceptance performance period energy or water use. Include variables such as weather, operating hours, set point changes, etc. Describe how each variable will be quantified, i.e., measurements, monitoring, assumptions, manufacturer data, maintenance logs, engineering resources, etc.
- Define key system performance factors characterizing the post-acceptance performance period conditions. Include factors such as comfort conditions, lighting intensities, temperature set points, etc.
- Describe the intent of post-acceptance performance period verification activities – what will be verified.
- Provide detailed schedule of post-acceptance performance period verification activities and inspections.
- Define requirements for Institution witnessing of measurements if different than whole project data requirements.
- Provide details of post-acceptance performance period data to be collected, including: Parameters to be monitored, Details of equipment to be monitored (location, type, model, quantity, etc.), Sampling plan, including details of usage groups and sample sizes, Duration, frequency, interval, and seasonal or other requirements of measurements, Monitoring equipment to be used, Installation requirements for monitoring equipment, Calibration requirements/procedures, Expected accuracy of measurements/monitoring equipment, Quality control procedures to be used, Form of data to be collected (.xls, .csv, etc.), Sample data collection forms (optional)
- Detail data analysis to be performed.
- Define O&M and repair reporting requirements. Detail verification activities and reporting responsibilities of Institution and contractor on operations and maintenance items. Define reporting schedule.

**ENERGY STAR:** For each building included in the project, ESCO will provide a Portfolio Manager rating. Also, for applicable buildings, ESCO includes the cost to provide services and complete the annual application for a building ENERGY STAR label. ESCO shall provide a Portfolio Manager rating and energy performance target score estimate. For each eligible building, ESCO shall provide a pre-retrofit Energy Performance Rating using EPA ENERGY STAR's Portfolio Manager, the weather normalized energy intensity in kBtu/SF, and an estimated post-retrofit Energy Performance Rating. If the building type is not eligible for rating in Portfolio Manager, then the normalized source EUI will suffice. ESCO shall provide a completed Cash Flow Opportunity Calculator (CFO Calculator) for the project, with variables inserted that represent the most likely options available to the customer. This will enable the ESCO and the customer to have an agreed-upon format for

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discussing project financing options and the potential costs of project delays. The CFO Calculator will be provided in both hard copy and electronic format, so that the agency can run its own analyses on financing options in the agreed format. ESCO will submit a completed Cash Flow Opportunity spreadsheet using the Cash Flow Opportunity Calculator (CFO Calculator) for the total project which shall include all facilities to be improved.

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**EXHIBIT D**

**Cost and Pricing for IGA Development**

Where a prior RFP required cost and pricing information, the response is repeated below or else negotiated with respect to the agreed maximums.

Institutions may choose to accept audit costs, markups, margins and fees proposed by ESCO for individual projects without further negotiation, provided they do not exceed the maximums established in the tables above, or directly negotiate with ESCO for reductions as dictated by individual facility or project requirements. ESCO may also propose lower audit costs, markups, margins and fees depending upon individual project considerations or their own internal business approach.

**Cost Markups**

Provide your company's markups in the table below for each category listed. Markups represent a percentage added to the base cost for the project (excluding the cost of the audit).

This format is required and must be completed in its entirety. Use only the categories shown. Ranges for markups are not acceptable.

Clearly describe how self-performed work will be charged (billed hourly, billed as a markup of equipment and labor costs, etc.). If self-performed work will be billed hourly, include markups proposed to be applied to the hourly rate.

<b>Construction Costs</b>	<b><i>Maximum Markup above actual costs (if any)</i></b>
Subcontractor Costs (Contractor Costs to ESCO)	
Other Direct Purchases of Equipment, Material, Supplies by the ESCO (do not include subcontractor supplied purchases as they should be included above)	
Design (state at right whether this shall be completed by the ESCO or subcontracted)	
Project Management (state at right whether this shall be completed by the ESCO or subcontracted)	
Commissioning (state at right whether this shall be completed by the ESCO or subcontracted)	
Training (state at right whether this shall be completed by the ESCO or subcontracted)	
Construction Measurement and Verification (state at right whether this shall be completed by the ESCO or subcontracted)	
Permits (markup allowed only if permits are acquired by ESCO)	
Performance Bond	

**Project Margins**

In the table below provide the margins that will be applied to the project. Margins represent the percentage of the total price.

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<b>Project Margin</b>	<b>Maximum % Margin</b>
Overhead Percent	
Profit Percent	

If a proposal is from a joint venture partnership, include proposed maximum allowable markups in the schedule format above for each participating company.

**Audit Fee**

Below is the fee to conduct the Investment Grade Audit and Project Development Proposal, on a cost per square foot basis and total price.

		<b>Proposed Max cost per sf</b>
	Investment Grade Audit and Project Proposal	\$/sf Total \$

**Other Fees**

For each category describe how that annual cost is determined, how the fee is charged to the project and when it is applied. Markups on fees are not allowable under the SEO/EPCP.

<b>Annual Cost Category</b>	<b>How Price is Determined</b>	<b>Years Applied (One-time, Annual, etc.)</b>
Warranty		
Post-Retrofit Measurement & Verification		
Maintenance		
Other:		
Other:		
Other:		

**Contingency**

Describe your company's typical level of contingency budget for lighting, electrical, mechanical, controls projects, and other projects and how it proposes to apply contingency to cover changes in work scope and subcontractor change orders. All unused contingency funds will revert to the Institution or be applied to additional work scope through a change order approved by the Institution.

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**EXHIBIT E**

**Pricing for Project Proposal Development**

The below schedule is a deliverable that summarizes the pricing structure and the proposed project costs and price. Note that the base construction costs are presented in terms of margins for the purpose of the project proposal development, whereas they are represented as markups in **Exhibit D: Pricing for Project Proposal Development** for use in developing the IGA.

		<b>Project Budget</b>	<b>Percent of Total Project Price</b>	<b>Price/ Cost</b>
		<b>Base Construction Costs</b>		
	a	Subcontractor Costs (Contractor Costs to ESCO)		
	b	Other Direct Purchases of Equipment, Material, Supplies (Supplier Costs to ESCO)		
	c	Design		
	d	Project Management		
	e	Permits		
	f	Performance Bond		
	g	Commissioning		
	h	Training		
	i	Construction Measurement and Verification		
sum (a:i)	j	<b>Sum Project Direct Costs</b>		
	k	Overhead Percent		
	l	Profit Percent		
Sum (j:l)	m	<b>PROJECT PRICE SUB TOTAL w/OH &amp;P</b>		
	n	Investment Grade Audit and Project Proposal		
	o	Contingency		
	p	Third Party Consultant Fee	<b>2%</b>	
Sum (m:p)	q	<b>TOTAL PROJECT PRICE</b>		

***Annual Costing***

Provide a price for all annual services not included above including but not limited to Warranty, Measurement and Verification, and Maintenance below.

**RFP for Energy Performance Contracting Services**  
**Attachment F: Model Investment Grade Audit & Project Proposal Contract**

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CATEGORY OF ANNUAL COST	How Price is Determined	Years Applied (One-time, Annual, etc.)
Warranty		
Measurement and Verification		
Maintenance		
3 <sup>rd</sup> Party M&V Review	5% of annual savings	
Other:		

## **ENERGY SAVINGS PERFORMANCE CONTRACT**

This document is part of a collection of model procurement and contracting documents that represent Best Practices for state energy offices (SEOs) to launch and administer programs to increase energy efficiency through Energy Savings Performance Contracting. The documents draw from successful programs in various states and are continually updated to incorporate the latest strategies. They can be easily customized to meet the needs of any SEO or similar government department.

### **DESCRIPTION –Energy Savings Performance Contract**

This Energy Savings Performance Contract is for design, construction, guarantee, and follow-up monitoring of energy-saving projects. An energy audit was previously completed that identified the costs and savings of each project. The audit provides the basis to develop and negotiate this Energy Savings Performance Contract.

*This is a model document only and does not attempt to identify or address all circumstances or conditions you may encounter or desire. Consult with your legal counsel and procurement staff to adapt it to meet your needs.*



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